

Practice: 659 - Wetland Enhancement**Scenario: #3 - Depression Sediment Removal and Ditch Plug****Scenario Description:**

A Depressional HGM class wetland is to be enhanced. The tract size is 15 acres, and the actual wetland size is 10 acres. The site is a recharge depression, fed only from surface runoff. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11-WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.

Before Situation:

The wetland has been converted to agricultural production, and the tract drained with a surface ditch. The ditch is 4' average depth, and 12 feet average width. The wetland receives surface runoff from an adjacent upland watershed, and ponds water on a shallow perched layer. The watershed has been converted from native to agricultural landuse, and the resultant soil erosion has deposited 6" of sediment in the bottom of the depression.

After Situation:

The ditch has been plugged by the installation of a 50' long section of compacted clay fill, and the deposition has been removed down to the original topsoil layer. A herbaceous plant community has been seeded. Facilitative practices include Conservation Cover. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.

Scenario Feature Measure: Acres of Tract**Scenario Unit:** Acre**Scenario Typical Size:** 15**Scenario Cost:** \$25,268.42**Scenario Cost/Unit:** \$1,684.56**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic yard	\$4.38	89	\$389.82
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$2.36	8067	\$19,038.12
Foregone Income						
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$334.10	7.5	\$2,505.75
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$343.51	3.75	\$1,288.16
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$248.86	3.75	\$933.23
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$556.67	2	\$1,113.34

Practice: 659 - Wetland Enhancement**Scenario: #5 - Riverine Channel and Floodplain Restoration****Scenario Description:**

A Riverine HGM landscape on a small stream on a low stream order riparian landscape has been converted to agricultural production. The stream channel has degraded. The reach is 1500 feet in length, and the tract size is 15 acres. The wetland area is 10 acres. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.

Before Situation:

Channel incision has broken the lateral connectivity between the stream and floodplain. The conversion to cropland was accompanied by filling and leveling of backswamp, side channel, and oxbow features which formerly ponded water or exposed the floodplain groundwater table. The site no longer has access to floodwater or water surface profile supported groundwater. No suitable seed bank exists for natural regeneration of the original hydrophytic plant community, either in the channel, or on the floodplain.

After Situation:

The hydrology of the site is restored by the installation of a series of rock check structures to raise the stream water surface profile. Floodplain macrotopographic features replicating the original side channels, oxbows, and backswamps are constructed by excavation. Spoil is placed adjacent to the excavations to replicate natural depositional features. The average depth of the excavated features is 2 feet, and the surface area of the excavations is 25% of the tract size. The eroding stream bank is stabilized with soil bio-engineering features, and fish habitat improvement measures are installed in the channel. The tract is seeded to appropriate hydrophytic and upland vegetation, both woody and herbaceous. Facilitating practices are Streambank and Shoreline protection, Structure for Water Control, Conservation Cover, Tree/Shrub Establishment, and Stream Habitat Improvement and Management. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.

Scenario Feature Measure: Acres of Tract**Scenario Unit:** Acre**Scenario Typical Size:** 15**Scenario Cost:** \$12,979.48**Scenario Cost/Unit:** \$865.30**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$2.36	3025	\$7,139.00
Foregone Income						
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$248.86	3.75	\$933.23
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$343.51	3.75	\$1,288.16
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$334.10	7.5	\$2,505.75
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$556.67	2	\$1,113.34

Practice: 659 - Wetland Enhancement**Scenario: #6 - Enhanced wetland Topography****Scenario Description:**

A wooded wetland is excavated to create wetland topography suitable for wildlife habitat and enhance hydric conditions. Pools are excavated on 10% of the site 6-18 inches deep. 5% of the trees in wooded area are removed during excavation to promote desired vegetation and create pools.

Associated Practice(s) :Conservation Cover (327),Tree and Shrub Planting (612), Riparian Herbaceous Buffer (390), Riparian Forest Buffer (391), Wetland Wildlife Habitat Management (644), and Upland Wildlife Habitat Management (645).

Before Situation:

A wooded wetland or abandoned farmland that has grown into a wooded area is lacking wetland topography to provide adequate food and cover for wildlife. Topography is relatively flat with a slope of 1-3% with 1-2 inch deep depressions. The area is mapped as wetland and watertable is within 8 inches. The seasonal high water is at the surface. The site is typically around 10 acres. Soils are saturated

After Situation:

Area is excavated to create 20 x 40 ponded areas with 10% in pools 6-18 inches deep. Removal of trees to provide access for construction in 20 x 40 ponded areas around 5% of the 10 acres were removed of trees. The soil removed from the ponded areas is used to create mounds for habitat.

Scenario Feature Measure: Acre of wetland enhancement

Scenario Unit: Acre

Scenario Typical Size: 10

Scenario Cost: \$13,702.61

Scenario Cost/Unit: \$1,370.26

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, dump, 8 CY	1401	Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only.	Hour	\$66.43	40	\$2,657.20
Hydraulic Excavator, .5 CY	930	Track mounted hydraulic excavator with bucket capacity range of 0.3 to 0.8 CY. Equipment and power unit costs. Labor not included.	Hour	\$63.85	65	\$4,150.25
Foregone Income						
FI, Wheat Dryland	1963	Dryland Wheat is Primary Crop	Acre	\$248.86	2.5	\$622.15
FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$334.10	5	\$1,670.50
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$343.51	2.5	\$858.78
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$20.77	32	\$664.64
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$41.91	8	\$335.28
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$28.85	85	\$2,452.25
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$291.56	1	\$291.56